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10/042,556	11/19/2001	Ronald Bentley	135733	4539

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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 11/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/042,556

Applicant(s)

BENTLEY, RONALD

Examiner

Daniel Swerdlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19, 21, 22, 24 and 26 is/are rejected.
- 7) ☒ Claim(s) 20, 23 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 through 19, 21 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by May (US Patent 6,329,800).

3. Regarding Claim 1, May discloses a drive module (Fig. 3, reference 12) for a driver that inherently has an inherent voltage drop for a twisted pair telecommunications medium (column 1, lines 34-36; column 2, lines 48-54) with an output terminal (Fig. 3, reference 20) coupled with a communications loop that inherently requires a minimum operational voltage. May further discloses a control module (i.e., a control device) (Fig. 3, reference 16; column 3, lines 1-14) coupled with the output terminal of the drive module. May further discloses a power supply circuit (i.e., power supply device) (Fig. 3, reference 14) coupled with the control module and the drive module and controlled by the control module to deliver a supply voltage to the driver module (Fig. 7; column 5, lines 48-67), the supplied voltage being optimized for efficient use of power (i.e., the supplied voltage being substantially equal with the minimum operating voltage less the internal inherent voltage drop) (column 2, lines 25-36).

4. Claims 2 through 9 claim variations as to the correspondence between drivers, power supplies and control devices. Because of the broad nature of the recitations in Claim 1, notably

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the consistent use of the broad numerical limitation “at least one” associated with the elements, the basic configuration of one driver, one control module and one power supply circuit as disclosed in May meets all the variations.

5. Regarding Claim 2, May discloses one control module coupled to the output terminal of an associated drive module (Fig. 3, reference 16, 12).

6. Regarding Claim 3, May discloses one control module coupled to the output terminal of the drive module (Fig. 3, reference 16, 12). Since the embodiment disclosed by May has one drive module output terminal, the control module is coupled to each output terminal.

7. Regarding Claim 4, May discloses one power supply circuit coupled to an associated drive module (Fig. 3, reference 14, 12). Since the embodiment disclosed by May has one drive module, the power supply circuit is coupled to each driver module.

8. Regarding Claims 5, 8 and 9, May discloses one power supply circuit coupled to an associated drive module (Fig. 3, reference 14, 12).

9. Regarding Claims 6 and 7, May discloses one power supply circuit coupled to an associated drive module (Fig. 3, reference 14, 12). Since the embodiment disclosed by May has one drive module, the power supply circuit is coupled to each driver module.

10. The recitations in Claim 10 and claims depending therefrom of applying the apparatus to “selected” line drivers is not given weight since no details of the selection process are claimed and the grounds of rejection are perfectly applicable to line drivers that are selected in some way.

11. Claim 10 is essentially similar to Claim 1 and is rejected on the same grounds.

12. Claims 11 through 18 are essentially similar to Claims 2 through 9, respectively, and are rejected on the same grounds.

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13. Regarding Claims 19 and 21, May discloses an individual control line between the drive module output and the control module (Fig. 3, reference 12, 16; column 3, lines 63-67).

14. Regarding Claim 24, as stated above apropos of Claims 19 and 21, May discloses an individual control line between the drive module output and the control module (Fig. 3, reference 12, 16; column 3, lines 63-67). Because the control module controls the power supply, these control lines constitute "individual communication lines intermediate [the] line driver and said power supply means".

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 2 through 9, 11 through 19, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over May.

17. Claims 2 through 9 claim variations as to the correspondence between drivers, power supplies and control devices. Because of the broad nature of the recitations in Claim 1, notably the consistent use of the broad numerical limitation "at least one" associated with the elements, the basic configuration of one driver, one control module and one power supply circuit as disclosed in May meets all the variations. Further, even if read more narrowly, the variations in correspondence between the elements are simply replication of elements and their effects (in the case, for example, of the multiple power supplies each corresponding to one of a plurality of

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drivers as in Claims 4 and 6) or simple integration of elements without unexpected results (as in the use of a common power supply for a plurality of drivers as in Claims 5, 8 and 9). As such, the basic configuration of one driver, one control module and one power supply circuit as disclosed in May makes obvious all the variations. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) and *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

18. The recitations in claims depending from Claim 10 of applying the apparatus to “selected” line drivers is not given weight since no details of the selection process are claimed and the grounds of rejection are perfectly applicable to line drivers that are selected in some way.

19. Claims 11 through 18 are essentially similar to Claims 2 through 9, respectively, and are rejected on the same grounds.

20. Claims 19 and 21 similarly represent obvious variations of the system disclosed by May with the system replicated and the replicated control modules made integral.

21. Regarding Claim 24, as stated above apropos of Claims 19 and 21, May discloses an individual control line between the drive module output and the control module (Fig. 3, reference 12, 16; column 3, lines 63-67). Because the control module controls the power supply, these control lines constitute “individual communication lines intermediate [the] line driver and said power supply means”.

22. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over May in view of Shimamori (US Patent 6,204,650). As shown above apropos of Claim 10, May anticipates and/or makes obvious all elements except the control means coupled with the line driver means via a multiplexer for determining extant operational voltage. Shimamori discloses a power

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supply apparatus that uses a multiplexer to selectively communicate one of a plurality of output voltages to a processor (Fig. 3, reference 34, 41; column 5, lines 8-20). Shimamori further discloses that use of the multiplexer reduces the scale of the circuit and allows sharing of an A/D converter (column 7, lines 29-32). It would have been obvious to one skilled in the art at the time of the invention to apply output voltage multiplexing as taught by Shimamori to the system anticipated and made obvious by May for the purpose of realizing these advantages.

23. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over May in view of Harris et al. (US Patent 6,333,654). As shown above apropos of Claim 10, May anticipates and/or makes obvious all elements except selectively coupling the driver to an appropriate one of a plurality of power supply lines. Harris discloses a variable power supply line driver with supply voltage selectors (Fig. 4, reference 44, 45; column 6, lines 4-7) that selectively couple a driver (Fig. 4, reference 36) to one of a plurality of power supplies (Fig. 4, reference V1, V2). Harris further discloses that power supply switching increases efficiency and reduces distortion (column 1, lines 35-50). It would have been obvious to one skilled in the art at the time of the invention to apply selectively coupling the driver to an appropriate one of a plurality of power supply lines as taught by Harris to the system anticipated and/or made obvious by May for the purpose of realizing these advantages.

***Allowable Subject Matter***

24. Claims 20, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base

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claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

25. Regarding Claim 20, while May discloses communication of the drive module drive signal to the control module to determine a dynamic control signal for the power supply circuit, May does not disclose the use of an addressed communication bus for this communication. Harris discloses power supply control responsive to a driver input rather than a driver output (Fig. 4). US Patent 5,898,342 to Bell discloses a signal processor (Fig. 2, reference 210) that is a common source of driver input signal and power supply selection signal. As such, the prior art fails to anticipate or fairly suggest the use of an addressed communication bus for communication of the control signals between a driver and a control circuit.

26. Regarding Claim 23, while May discloses communication of the drive module drive signal to the control module to determine a dynamic control signal for the power supply circuit, May does not disclose the use of an addressed communication bus for this communication. Harris discloses power supply control responsive to a driver input rather than a driver output (Fig. 4). Bell discloses a signal processor (Fig. 2, reference 210) that is a common source of driver input signal and power supply selection signal. As such, the prior art fails to anticipate or fairly suggest the use of an addressed communication bus for communication of information signals from a power supply to a driver.

27. Regarding Claim 25, while May discloses communicating power from a power supply to a driver and communicating output voltage information from a driver to a power supply via a controller and Shimamori discloses a power supply apparatus that uses a multiplexer to selectively communicate one of a plurality of output voltages to a processor, the prior art fails to



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anticipate or fairly suggest communication of information from a power supply to a driver via a multiplexer.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forrester Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Swerdlow, Patent Examiner Art Unit 2644